

BIBLICAL CREATION



JOURNAL OF THE BIBLICAL CREATION SOCIETY BC 16

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Communing with “Nature”

With glowing words of praise, David commences the 19th Psalm and recounts the way God speaks by the heavenly bodies of the natural world. In the 8th Psalm, we read how the night sky provoked thoughts of great importance in David's mind. He saw the handiwork of God — the moon and the stars — and recognised that, in comparison, man is insignificant. “What is man that you are mindful of him, the son of man that you care for him?” (Ps. 8.4). How is it that the Sovereign Lord, who has created the heavens and the earth, not only takes note of man but also deals with him personally? The book of natural revelation is opened in Psalm 104. The psalmist recounts God's mighty deeds in ordering his world according to his perfect will. “How many are your works, O Lord! In wisdom you made them all; the earth is full of your creatures.” (Ps. 104.24). Many are the psalms which lead us to meditate on the works of God. Truly, we are blessed with a world which is inexhaustible in its capacity to provide profitable themes for meditation and causes for thanksgiving and praise to God.

This summer, the writer was privileged to visit and enjoy some of the most spectacular scenery to be found in the United States of America. Mountains and valleys, deep canyons and extensive plains, deserts and regions where surface features testify of powerful forces deep below: in every place innumerable reasons were found to praise the Lord and to admire his administration of the world.

Many of the places were designated National Parks and, as a consequence, a wide range of services were available to the visitor. These included literature, maps, guided walks and slide-illustrated talks by naturalists. Each Visitor Centre had regular tape/slide presentations to introduce people to their particular park. Some of these presentations have provided the stimulus for this editorial.

One tendency, which was most prominent at Yellowstone National Park, was to advocate a mystical response to “Nature”. Nature was described as a creator, who fashions the earth's surface into exquisite and awe-inspiring contours. The sense of wonder, with which people instinctively respond to the sights and sounds of the Park, was recognised as having religious significance — but, in the presentation, the focus of attention was upon Nature, not upon God. The Park became Nature's cathedral, along whose aisles the visitor may walk to learn something about meaning and reality. Though it was never explicit, the savour of mysticism was present: it was a new form of pantheism. The contrast between the psalmist, who worships the Personal Creator God, and the advocates of this secularised mystical religion, is total.

A second tendency, which was noted in many different presentations, was to create the impression that everything goes on as it has always done from time immemorial. The description of present-day processes was combined with a philosophical commitment to these processes being invariant with time. This guiding rule is known traditionally as the principle of uniformitarianism, and it has dominated geological interpretations since the days of Charles Lyell. Despite the fact that many geologists are questioning this principle and are reviving catastrophic interpretations, the presentations made no attempt to respond to these new ideas. As a result, the listeners were exposed to traditional uniformitarian interpretations and no others. There was no distinct beginning to geological history, and no end — just the continual steady operation of the forces of nature, moulding and shaping the features of our planet. This world continues in the way it has gone for century after century, clocking up thousands upon thousands of years, millenia upon millenia. This view of time and history is hostile to Biblical revelation and it needs to be challenged. The operation of natural forces is God's providential government of the world, and it must be distinguished from God's creative activity. God upholds that which he has created — but the upholding is quite a different activity from the creating! Furthermore, whilst this world was made perfect, it became marred when sin entered at the Fall. This subjection to bondage of the creation is excluded from consideration by advocates of uniformitarianism. In addition, the worldwide Flood in the time of Noah has no place in the scheme of earth history developed according to uniformitarian principles. Finally, these conflicting views of earth history have different expectations about the future: the return of Christ will bring this present age to an end, but 'more of the same' is the prediction of traditional uniformitarianism.

Both these tendencies have subtle effects upon the hearer. Without being conscious of the momentous issues, concepts are absorbed which are incompatible with Biblical revelation. In the unbeliever, the effect is to reinforce a world-view which rules out a creator God who has worked miracles to bring the universe into being. This is why these matters are important: millions witness awe-inspiring reminders of the glory of God, and yet the message falls on deaf ears. The Scriptures declare that this failure to honour God is sin, and that men are without excuse (Rom. 1.18-20). Our task as Christians and as Creationists is to challenge this unbelief of the world and to proclaim the truth concerning the past, the present and the future. More personally, it is to practise the truths we profess by responding with thanksgiving and praise as we behold the glories of the creation. Christians, more than others, ought to be demonstrating how we are to live on this planet which God has entrusted to us. And we ought to be showing to our fellow men what it is to take pleasure in the handiwork of our God.

David J. Tyler.

NOTICE

The velocity of Light and the Age of the Universe

The Australian astronomer Barry Setterfield has aroused considerable discussion through his stimulating and provocative papers on the above subject in the Journal **Ex Nihilo**. These are worthy of detailed study and critical examination. If Mr Setterfield's hypothesis should be sustained in the light of all the evidence this clearly would have far-reaching implications.

These papers have been produced and then revised in three parts. At present they are available direct from Australia:

Creation Science Foundation, PO Box 302, Sunnybank, Queensland 4109.

As from January 1984, the full three parts (I, II and III, 171 pp. A4) will be available in the UK from:

Mr M. Bowden

for £5, including post and packing.

D.C. Watts

NEWS! NEWS! NEWS! NEWS! NEWS! NEWS! NEWS! NEWS! NEWS! NEWS!

1984 "CREATION AND ORIGINS" STUDY CONFERENCE

23-26 July, 1984,

High Leigh Conference Centre, Hoddesden, Herts.

Speakers include: Prof. Edgar Andrews, Dr. Chris Darnbrough, Gerald Duffett, Dr. David Gower, Rev. Gordon Keddie, Dr. John Peet, David Tyler, Paul Verscheuren, Dr. David Walton and Dr. David Watts. Wednesday 25th July will be an Open Day.

Begin to plan now to attend "High Leigh" in '84.

CORRESPONDENCE

Aldro School
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28th September, 1983

Sir,

May I support the view expressed in your latest editorial on the importance of evidence in the creationist debate.

Let the "Evolutionist" have an open mind and study as many facts as he can. Let the "Creationist" have an open mind and study as many facts as **he** can. Both can be creationists if they believe in the Creator. Let the Scientific debate continue on scientific lines. Both sides have been guilty of dogmatism.

The plea is for scientists of whatever religious persuasion to behave scientifically. Just as those wishing to 'knock' Christianity have expressed "faith" in a one-sided interpretation of scientific evidence, so Christians have held equally tenaciously to one particular interpretation of a Biblical passage which is open to other perfectly valid ones.

Let us move away from this kind of attitude and go forward scientifically in our appraisal of the wonderful evidence that lies before us.

Yours faithfully

Crispin Hill
Headmaster

Contributors to this issue

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The first Biblical Creation Lecture.

THE COSMOS: THE BIBLICAL PERSPECTIVE

Professor E.H. Andrews

Since this is the first 'Biblical Creation Lecture', it might be appropriate to introduce my subject by reviewing briefly the progress of the creationist movement worldwide. As we look back over the brief history of this society we can see that there has been a remarkable growth in interest in the subject of creation. The creationist movement, viewed as a world-wide phenomenon, exhibits much evidence of growth. This growth is apparent, both in the rise of creationist groups in different nations, and in the attention being given to what they have to say. Creationism is not confined to the USA, as some commentators seem to think. In European countries, strong movements have been formed in Sweden, Holland and Germany while the growth of creationism in eastern lands is also evident. Australia affords another excellent example and many of you are familiar with the journal 'Ex Nihilo' published in that country. Thus we can be encouraged by the rise of these groups where previously, as far as we know, there was no united testimony to the Christian and Biblical position on Creation.

But not only has growth occurred in the establishment of groups in different countries, but also in what I might call the credibility of the creationist position. Over recent months and years we have seen an increasing willingness on the part of the mass media at least to air the views and opinions of creationists. Organs like the BBC, of course, still exhibit an almost total bias towards the evolutionary perspective, but nevertheless they have been willing to do what in earlier years they refused to do, namely to allow creationists time and exposure in the media to promote, or at least express, their views.

There has also been an increase in public awareness, perhaps linked to what I have just said, and a corresponding increase in opposition and reaction by the evolutionary establishment. I read just the other day that recent Gallup poll in the USA came up with the startling result that 44 per cent of all Americans actually preferred to believe in a recent miraculous creation, than in evolution, and that a further 38 per cent were believers in creation by a process of theistic evolution. I do not know how accurate Mr Gallup's figures are in this particular case. I make frequent visits to the other side of the Atlantic and would not have thought that nearly half the population there were believers in special creation. But nevertheless, it does indicate that the public awareness and acceptability of creationism has undergone a great advance.

The reaction, as I said, is becoming more and more shrill. The evolutionary camp is becoming more and more intolerant. A spate of correspondence in 'The Times' during 1982 exhibited a growing concern and fear amongst the evolutionary establishment that creationist views might become established and accepted.

But there is also growth in another area, one which I consider particularly important and which is highly relevant to what I have to say to you this afternoon. There has been a growth in Christian awareness of the importance of the doctrine of creation. It wasn't long ago that a reviewer of one of my books took me to task for saying that we need a theology of science in order to evangelise effectively in our modern society. He said no, we must preach the gospel and this creation business (he is a creationist himself) ought to be kept as a secondary activity, a kind of hobby as it were. But I cannot see it that way. I believe the doctrine of creation is absolutely fundamental to a biblical understanding of the nature of God. If you ask the Scriptures, particularly the Old Testament, what kind of a god is God, the answer you will get is that He is the one who created the heavens and the earth. That is God's 'trademark', his major identification. We find this emphasis throughout the pages of the Old Testament, but not only there. When the Apostle Paul on his missionary journeys encountered untaught groups of people as in Lystra and Derbe, he was at pains to identify the God and Father of our Lord Jesus Christ as the One who created the heavens and the earth. Without a full-blooded doctrine of creation, even our gospel preaching is emasculated and weak. I do not think it is any accident that John, as he sets out in his gospel to present the Lord Jesus Christ and selects that information and those accounts of Christ's life and ministry that will most persuade men to a belief in Christ, begins with a prologue in which he identifies Jesus Christ as the 'logos' who made all things. I therefore welcome the growing awareness that the doctrine of creation is a vital and essential part of the entire Christian message, and that without it we have a weakened gospel, and I am very encouraged by the progress of the creationist movement around the world.

But at the same time there is a growing problem that I discern and which I shall use to introduce a number of positive statements that will follow. The problem that I discern is a growing divorce, a growing separation, between what we might call scientific creationism and biblical creationism. Now I am sure you are aware of the distinction I am making at this point. The distinction arises largely from the problems that our American brethren face concerning the teaching of creation and evolution in their state schools. The problem is that, under the American Constitution, it is not permissible to teach religion or sectarianism in the state schools. The American branch of creationist movement has therefore attempted to develop a scientific creationism that has no religious content. They thus present the scientific evidence and

observations relating to the universe and to life as things that can best be interpreted in terms of a creation model. That is, they take scientific evidence from all branches of science and instead of interpreting that evidence as most people do in terms of an evolutionary model, they fit it instead to a creationist scenario. They examine the evidence and say "As we look at the details we see that they are more consistent with a recent creation than with a process of evolution over billions of years. They are attempting to eliminate the religious element from the creationist position. Thus in the recent test case in Arkansas, of which most of you will have read, I'm sure, it was argued that creationism could properly be taught alongside evolution in schools, because they were both scientific models, alternative scientific models, and that creationism was just as free of religious content as was evolution. The argument was thrown out in that particular case, but there will no doubt be other cases which we shall follow with considerable interest.

However, scientific creationism, much as one can understand the particular reasons for its adoption in the USA, does, it seems to me, involve a number of very real dangers and problems. First of all, of course, it is quite obvious that one can join forces in scientific creationism with all kinds of non-Christian beliefs and outlooks. There are Buddhists who are scientific creationists. There are Jehovahs Witnesses who are scientific creationists. There are even those who make no religious profession at all who are scientific creationists and as an example of this I would remind you of the recent book published by Sir Fred Hoyle and Chandra Wickramasinghe. Their book 'Evolution from Space' is both very entertaining and very interesting, and I would recommend it for your reading. They have a concluding chapter entitled 'Convergence to God', and they reason from the scientific evidence to a position where they state that the information content of living things could not possibly have arisen by chance and must therefore be the product of intelligence. They are at pains to point out, however, that their god, their ultimate intelligence, bears no relation to the gods of conventional religions and least of all to the God of Christianity. So, scientific creationism is a-Christian, if I can coin that expression. It is not anti-Christian, of course, but it is a-Christian. It is devoid of a Christian content and quite deliberately so. It is devoid of a biblical content and quite deliberately so. You may say, of course, that this is quite all right, because it simply represents a step in the right direction. If we can convince men that it is reasonable and rational to believe in creation on the grounds of scientific evidence, we can at a later stage impress upon them the truth of the Christian revelation. This is an argument which has some strength, and one that in the past I have used myself, namely that scientific creationism is a step in the right direction. But more recently I have begun to wonder whether that is as true as might appear at first sight. I wonder if there is not in scientific creationism a danger of replacing one false god with another. In replacing the false god of evolution by a false god of deism. For scientific creationism, if it

leads anywhere in a religious sense, leads to deism and not to Christian faith.

In what ways does the god with whom one comes up by reasoning from scientific creationism differ from the god of biblical revelation? Well, I would suggest one or two very important ways. If we turn to Hebrews chapter 11 and verse 3 we read as follows: 'By faith we understand that the worlds were prepared (or 'framed' as the Authorised Version has it), by the Word of God, so that what is seen was not made out of things which are visible'. This verse is normally regarded as a statement of creation *ex nihilo*, that God created the physical and material universe out of nothing. I believe that is a proper interpretation of the verse, but the thing I want to point your attention to is the statement that it is 'by faith' that we understand that the worlds were framed by the Word of God. It is by faith that we arrive at this conclusion, not by rational argument or deduction. I am well aware that Romans chapter 1 suggests that man ought to be able to deduce true facts about God by observation of the cosmos. But the whole point of Romans 1 is to state that man *fails* to do that, and Hebrews tells us quite plainly that a true view of the God of creation is to be obtained through faith and faith alone. Therefore by definition the god whose existence and activity we may deduce on the basis of scientific creationism; the creator, the prime cause of all things at whom we might arrive by examination of the scientific evidence, cannot be the God of revelation because we are told on the authority of scripture that He is recognised by faith and not by argument.

I think one can go on to generalise the point a little and to suggest that the person who begins with scientific creationism and argues his way through to the existence of a creator, having achieved that degree of understanding by his own unaided reasoning, is *less likely* to recognise the importance of revelation to provide a further, deeper and more extensive knowledge of God. Therefore, I have this concern, that whilst I clearly recognise the reasons for and the purpose of scientific creationism, it might well lead men to a god who is not the God of biblical revelation, to a god of man's own construction; to a deistic god who can be known other than by faith.

I am not trying to be contentious. I am simply pointing out the dangers in this growing emphasis on scientific creationism, and I think that we have to be very careful indeed before we go too far down that road. There are dangers that have to be avoided. There is infinitely more about the God of creation than can be revealed or even hinted at by scientific creationism. I believe it is our task to present a biblical world view, a view of creation which begins with revelation rather than our own unaided reasoning. A biblical world view that will present the true God and not a deistic creator.

This, in essence, is the purpose of my lecture this afternoon. I want us to look

at the cosmos through the eyes of scripture. I want us to adopt a biblical perspective upon the cosmos. I want us to move away from a scientific creationist position to a truly biblical creationist position and to point the way by which we can avoid the pitfalls implicit in scientific creationism and provide a full and faithful picture of the cosmos and its Creator.

I want to look first of all at the COSMOS — ITS UNITY, secondly at the COSMOS — ITS DESTINY and thirdly at the COSMOS — ITS DESIGN.

I want to see how the Bible points us to a full and proper understanding of the cosmos under these three categories. In each case we are going to look first of all at the testimony of science and then at the testimony of scripture, so that we can see the parallels and the differences.

Cosmos — Its Unity

Let us begin by noting that the word ‘cosmos’ means an arrangement. It means an arrangement of beauty — that is the basic meaning of the word. It has links with the word ‘cosmetic’ and comes from a Greek verb which means to beautify, adorn or set in order. The cosmos, by definition, means an arrangement, an ordered system. The name itself, therefore, implies that the universe, insofar as we describe it as a cosmos, is an integrated and harmonious whole — a unity. And of course the word ‘universe’ is simply the Latin equivalent of cosmos in that sense.

What do we mean by the unity of the cosmos? Look first at the testimony of science itself. Science takes us quite a long way in considering the cosmos as a unity, an integrated and harmonious system. First of all, we have the testimony of science with regard to the uniformity or consistency of scientific law both in space and in time. This is both a result of scientific investigation and a basic axiom of scientific method. It is a result of scientific investigation in the sense that, as far as it has been tested, the proposal has been demonstrated to be sound. The laws of science are the same wherever they are tested, wherever they are investigated and whenever they are subjected to those tests. Science, therefore, demonstrates that the laws of science are consistent. They do not change from one day to another, from one century to the next. They do not change from one place to another upon the face of earth nor indeed, as far as we know, do they change in their nature from one part of the universe to another. At the same time, of course, science cannot actually prove the uniformity of scientific law. All it can say is that it has not so far found any exception to that uniformity. Thus science proceeds upon the axiom or assumption that scientific law is uniform and unchangeable both in space and in time.

That is, perhaps, self-evident, something that scientists simply take for granted and the rest of us would hardly want to question anyway. But when you stop to think about it, you realise that it is by no means self-evident that this should be so. Why should the law of gravity be the same in some distant galaxy as it is here upon earth? Why should the laws that control the behaviour of light and radiation be the same in all parts of the universe and at all times? Surely the unified character of the entire universal system must have profound implications. Another speaker today will be giving a critique of the 'big bang' theory of the origin and evolution of the universe. In that theory, whether you accept it or reject it, you have a good example of the scientist's desire to unify his description of the universe, to present it as a unity, as the product of a single unique event and not that of a number of quite different origination events which might have given rise to a variation of scientific law from place to place within the universe. There is an implication therefore in science, both in its axioms and in its findings, that the cosmos is a unity, because the same laws control its activity and interactions throughout all time. If this were not so it would be very difficult indeed to carry on the business that we describe as science.

Not only, however, do we have the concept of the uniformity of law in time and space, we have the concept of system. What do I mean by that? I mean that the universe is not made up of a vast number of independently-acting entities or bodies, or fields or whatever you might like to specify. Things work together in the universe, there is interaction. What do we mean by a system? The word 'system' describes a situation in which a number of different or independent entities work together to cause effects that could not be produced by those entities independently. We are familiar with the concept of system. We talk about the solar system, where the planets and the sun interact to produce a working cosmological machine. We talk about ecological systems in which different forms of life co-exist in a harmonious balance and equilibrium. We talk about weather systems, we talk about biological systems. We talk about the endocrine system, for example, in the body where we have different glands producing different substances but somehow all working together to produce a balance which controls the health and life of the individual. We talk about systems when we discuss nuclear structure. Wherever we look in the universe, things do not go their own sweet way. Things are interacting, things are working together, conspiring together one might almost say, to produce effects which are the results of systematic operation. This also testifies within the body of science to the unity or compatibility of the different aspects, concepts, laws and bodies that make up the universe.

Thirdly, there is the concept of economy. Science tells us that the universe is economic. Well what do I mean by that? I can best explain it by way of example, namely that the infinite variety of chemical substances and

materials, whether living or non-living, that make up this universe, are all constructed from fewer than one hundred naturally occurring elements. Here is an economy. Fewer than a hundred elements are sufficient to produce the millions of different substances, objects and bodies that we observe in the universe. The use of a few basic building blocks to construct a vast variety of objects and systems is the essence of economy. Another example is the common chemistry of life. From no more than four relatively simple molecules, built into the larger DNA molecule, the entire biosphere can be constructed with all its infinite variety. It is like using an alphabet of just four letters to construct a code by which an infinite variety of different messages can be conveyed. This 'genetic code' controls the form and function of all living creatures and gives rise to the vast variety that we recognise within the biological world.

Economy points to the basic unity of the cosmos. The principle of economy points to the fact that all the myriad diverse manifestations of life and of inanimate matter, the entire universe, is actually constructed both physically and conceptually from a very small number of basic building blocks. To some extent one can define science as the process of reducing this very complicated world in which we live (and the vast range of systems, interactions and substances that we observe) to a few simple laws and principles.

This is the philosopher's stone, if you like, for which the scientist is seeking. The universal law, the universal principle, from which everything else that happens can be derived as a special case or application. This is what drives the pure scientist, at least, in his search for simplicity in the midst of complexity. So then the testimony of science to the unity of the cosmos is considerable and extensive. But let us move on to the testimony of scripture in this regard.

Scripture agrees with science, very largely. Scripture says "Yes, all that we find concerning the unity of the cosmos in science is to be expected". But scripture traces that unity back to a far more fundamental cause. Scripture speaks first of all of a common origin of all things. It tells us that God in the beginning created the heavens and the earth. It tells us, in the words of the opening chapter of John's gospel, that all things were made by Him and then (in case you haven't got the message) it repeats the same thing in a negative fashion; "There was not anything made that was made" without Him. John is concerned to impress upon us that God (and he is speaking particularly of Christ and we shall come to that point in a moment) is the sole origin of all things, whether they be visible or invisible, spiritual or material. God is the common source and originator of all things. He did not take some pre-existing substance and transform it into the world. This is the whole thrust of the doctrine of the *ex nihilo* creation. He created this entire universe from pure spirit, from pure thought, from pure mind. Therefore, we expect the cosmos to be a unity, to have common and universal laws. We expect the things that

science turns up in its progress; we expect there to be some simple unifying principle that lies behind the entire universe. This principle, for which science seeks, is in fact revealed in scripture. It is the principle that all things came from the mind of God.

Scripture speaks not only of a common origin of all things but of a common source of all existence. One of the major teachings of the Bible is that God not only created all things but also sustains all things. We do not have time to enlarge upon this but I need only point you to two verses, one in Hebrews 1 and one in Colossians 1. In Colossians chapter 1 and verse 7 we read of Christ that 'He is before all things and in him all things hold together (or consist)'. It is evident from the context that 'all things' here include the entire physical universe. And if Colossians 1 v. 17 were not enough, Hebrews goes on to say that He (Christ) 'upholds all things by the word of his power'. Thus we have a present-tense sustenance of the universe. So much so, that the very laws of science viewed in the biblical perspective are the thoughts of God. The laws of science are the word of God's power by which He upholds the entire physical and natural universe. That is the only interpretation that one can place upon those verses.

But in Scripture not only do we have a common origin of all things and a common source of all existence, but we also have a common *ground* of all existence. I am differentiating here between a *source* and a *ground* (for want of better words perhaps). In order to establish what I mean by a common ground of all existence I would turn your attention to another verse in Colossians, one that precedes the verse that we looked at a moment ago, where we read this: 'He (Christ) is the image of the invisible God, the firstborn of all creation. For in Him all things were created both in the heavens and on earth, visible and invisible, whether thrones or dominions or rulers of authorities, all things have been created through Him and for Him. And He is before all things and in Him all things hold together'. I think you will notice there are three suppositions involved. All things were created *in* Him, *through* Him, and *for* Him. While, therefore, we can speak from Colossians 1 v. 17 of Christ being the source of all existence, in that He upholds all things moment by moment by the word of His power, the scripture goes beyond that. It really says that you cannot think of the created order without Christ. Christ as it were surrounds the cosmos. For the cosmos was created *in* Him, *through* Him, and *for* Him. I do not have time this afternoon to work out in detail precisely what those separate statements mean. I just want to point out that they add up to a christo-centric (Christ-centred) cosmos. It isn't simply that Christ created; it is not simply that Christ sustains. It is that the cosmos only has existence, meaning, significance and purpose in terms of Christ. In Him, through Him, for Him. And I believe that this is perhaps the central point of what I have to say to you this afternoon. We cannot have a truly biblical perspective on the cosmos without recognising the absolute centrality of Christ to the cosmos.

It is normal for us to think in terms of God the creator. We may even degenerate, as I was saying earlier, to a deistic position arrived at by our deductions from science and our human observations. But even as Christians we often think separately of God as the creator and Christ as the Saviour. That is quite wrong. We must understand that a fully biblical view of the cosmos is a Christ-centred view. What we are being told here in Colossians, and elsewhere, is that we cannot understand the cosmos, we cannot fully comprehend the universe in which we live, unless we relate that universe to Christ, for it was created in Him, through Him and for Him.

The thing that I want to highlight in this lecture is our need for a much clearer christology of creation. We have got to relate the cosmos to the Christ, for this is what the Bible does. It tells us that we shall not understand the cosmos fully, we shall not understand science fully, unless we view the cosmos in relation to Christ.

It is this christo-centric creationism that sets the biblical revelation apart from all other creationist positions and theories. And it seems to me that our task, as Christians, is to present Christ as the Christ of the cosmos and to present the cosmos as the cosmos of Christ.

Cosmos — Its Destiny

But let us move on. What is the destiny of the cosmos? Here also science has its testimony and I am going to deal with this fairly briefly. It is quite clear that science implicitly accepts or teaches that there is a destiny for the cosmos. The very nature of time indicates that there is a destiny, that the cosmos is moving onwards to some future condition, state or consummation that science tries to predict in a variety of ways. The 'arrow' of time (the fact that we cannot go backwards and forward in time as we can go backwards and forwards in space) constitutes a problem which has greatly exercised scientists and philosophers. The very fact of time, therefore, means that we are moving inexorably on towards a future destiny. Of course, the scientific scenarios of that destiny differ considerably. There are those who talk about a heat death in which the earth will be swallowed up by an expanding sun. Others speak of the entropy death, which is the total decay of all things into universal randomness; time will cease and there will be no further change or movement. In yet another type of scenario one looks forward down the arrow of time with the optimism of the evolutionist, who believes that evolution will carry mankind and the world forward to greater and greater things. But one point is clear. Science, by the nature of time, indicates that there is destiny. I suppose it could also be said that the nature of science itself, with its application in future technology, also implies a destiny, and one that varies between the hope of advancement in medical science to the fears of nuclear war and ecological disaster. Whatever scenario you adopt, you are saying that science, its growth

and its application, is going to lead us somewhere, although we don't know where. That 'somewhere' may be future triumph, it may be future disaster, but we can do little about it.

The nature of man also implies destiny. The nature of time, the nature of science and the nature of man all point to a destiny. Man has an in-built urge to self-improvement. Whether it be on the technical, social, political or personal level, man is always looking forward to a better future, always striving for improvement. It seems to be innate within the human breast to seek a destiny.

As we look around therefore, even with our unaided senses, we see that the cosmos is going somewhere. It is moving forward; it cannot go back, it cannot stand still. There is therefore by definition a destiny that awaits us. But that destiny is unclear.

The testimony of scripture is totally different from the scenarios of science. The first thing that I notice as I read my Bible is that the destiny of the cosmos, of the material creation, is bound up with the destiny of man, and in particular with the destiny of the church. This is an interesting fact, because we normally tend to separate the material world from the spiritual world. We tend to put them in different categories. We think of the material world as having no particular influence or impact upon the spiritual world and we think of the spiritual realm as having no particular relevance to the material. But that is not the teaching of the New Testament. If we turn to Romans 8, for example, we read words like this: 'The anxious longing of the creation waits eagerly for the revealing of the sons of God. For the creation was subjected to futility, not of its own will, but because of Him who subjected it, in hope that the creation itself also would be set free from its slavery to corruption into the freedom of the glory of the children of God. For we know that the whole creation groans and suffers the pains of childbirth together until now; and not only this but we also are ourselves waiting eagerly for the adoption, the redemption of the body.'

The apostle Paul here ties together the future destiny of the cosmos, of the physical universe, and the future destiny of the church. We have not time to look into the question of the subjection of the universe to vanity or futility. One may construe this subjection as the effect of the fall of man, so that even from the earliest date the physical universe is linked together with the fate and behaviour of man. Regardless of this, however, it is quite clear that the *future* destiny of the cosmos is clearly bound up in Christian revelation with the future destiny of the church of Jesus Christ. We might move on to the Revelation and to 2nd Peter to read about the new heaven and the new earth which we can no doubt equate to the transformation that Paul describes in Romans 8. In

2 Peter 3, there is a long passage on the future of the universe. He speaks of the present heavens and earth being reserved for fire, kept for the day of judgment and destruction, not of the universe, but of 'ungodly men'. Then he goes on to say that there will be a new heaven and a new earth. He says, 'we look for and hasten the coming of the day of God on account of which the heavens will be destroyed with burning and the elements will melt with intense heat. But according to his promise (and he refers back here to the prophet Isaiah) 'we are looking for a new heaven and a new earth in which righteousness reigns'. Now we cannot spiritualise away these references because they plainly refer to the physical cosmos in which we live. We cannot, perhaps, speculate too far on the nature and character of the new heavens and the new earth which we replace the present physical order. We are told here that there will be no more unrighteousness; we are told in Romans 8 that the universe will be delivered from the bondage of corruption, but just what this will mean in terms of a different kind of physical universe we do not know. But it is fairly clear to me that the N.T. writers are not simply speaking of restoration of the universe that existed before the fall of Adam, because we also read of the resurrection of the physical body. In I Corinthians we read that the body is sown a physical body, but raised a spiritual body. It seems to me, therefore, that the new heavens and the new earth will be an order in which that which is spiritual and that which is physical and material will be brought together into an even greater cosmological unity than we observe today. This is also suggested by Ephesians 1 verses 9-10 where again we find the christological emphasis we mentioned when considering the unity of the cosmos. In verses 9-10 of Ephesians 1 we read 'God made known to us the mystery of his will according to his kind intention which he purposed in Him (Christ) with a view to an administration (a future state of affairs) suitable to the fulness of the time. What is this 'administration' to be? It is to be 'the summing up of all things in Christ, things in heaven and things upon the earth'. There is to be a destiny involving the physical universe, the new heavens, the new earth, in a new level of integration between the physical and the spiritual. But, additionally, all this is to be in Christ. All things in heaven and earth, which quite plainly includes the physical universe, are to be 'summed up in Him'. Once again we see a Christo-centricity (Christ-centredness) which characterises and marks out the biblical testimony to the nature and history of the cosmos.

Cosmos — Its Design

Let me now turn to my final point, the cosmos, its design. The idea of design in nature is perhaps thought rather old-fashioned. We think perhaps of Paley's watchmaker and consider that the idea and concept of design went out of fashion about his time. Nevertheless, the whole concept of design in the cosmos is something that perhaps deserves a new look, a new investigation. For one thing, although science does not acknowledge design as such in the universe,

it nevertheless recognises a number of the essential ingredients of design. It recognises *order*, for example, and that order in nature is the rule rather than the exception. Order is more common than disorder. I can give an example from my own discipline of material science. The vast majority of the substances and materials that we find naturally, or manufacture artificially, are substances which are amorphous and do not possess that order, but the majority of solid substances are crystalline. Wherever you look in the universe you find order and systematic arrangement. This is one of the characteristics of design. Then, again, science recognises *information*. It recognises the existence of a genetic code, for example, in which information is stored. Information is another essential ingredient of design. Science also admits that many of the structures and systems in this world appear to have been brought into being to serve a *purpose*, which of course on a purely evolutionary view cannot be admitted. But there is a great dilemma in the self-imposed materialism of science which says we cannot consider and will not consider anything teleological in nature. The dilemma is that the laws of science which explain the order and the information that are found in nature cannot themselves be explained by science. The existence of those laws has to be taken simply as axiomatic, something given, something that science itself cannot explain. So science points towards the concept of design in the cosmos, although it is too shy to use the word explicitly.

But what of the testimony of Scripture? Well here, I believe, we have a very plain statement. First of all, let me define what I mean by design. By design I mean fitness for a purpose. In common usage we use the word 'design' to signify two different things. One use is to describe something which is aesthetically pleasing. We say that an object is well designed, if it is visually attractive. But then, if we are engineers or have any connection with that profession, we use the word 'design' in a rather more technical sense meaning 'fitness for purpose'. A thing is designed in order to fulfil a function. Indeed the second definition is capable of embracing the aesthetic definition, if the purpose of the object or system in question is to give aesthetic pleasure. So design is fitness for purpose. Design is the attribute (of an object or a system) of being suited to a purpose. It is interesting that the concept of fitness for purpose is superficially similar to the evolutionary concept of adaptation. This expression describes, in particular, an ability to survive in a given environment. But the concept of adaptation falls far short of our definition of design. Let me give just one example of why I can say that.

Fitness for purpose is what we mean by design. Adaptation means fitness for survival. So evolutionary adaptation can only conceive *purpose* in terms of *survival*. To survive is the only purpose of existence. That has to be the limit to which evolutionary thinking can take us. But if the only purpose in life is to survive, then it is very difficult to see how evolution has happened at all, because the amoeba is perfectly adapted for survival. When then did it, or

something like it, need to evolve into the vast diversity of living forms that we know today? There is a real philosophical *impasse* there for the theory of evolution, as it seeks to define what it means by adaptation.

The biblical declaration of design goes infinitely further. We can talk about purpose in biblical terms in a way that we cannot possibly discuss in terms of evolution. Therefore, because we can talk about purpose, we can talk about design, for design, as I said, is fitness for an intended purpose.

Now you may say where does the Bible declare the principle of design in the cosmos? Well, there are many scriptures that point in this direction, but I am going to be satisfied with only one, and that is to be found in the opening chapter of the Bible, in Genesis 1. There is a refrain that occurs throughout that chapter the meaning of which is, I think, very often forgotten or unrecognised. That refrain is the statement that God looked at the things that He had made and pronounced them 'good'. The statement is made on day 1 of the creation record, it is made twice on day 3, once each on days 4 and 5, and twice again on day 6. So it is a genuine refrain that runs throughout the creation narrative. Seven times we read that God looked at what He had made and 'it was good'. In the closing verse we are told, 'It was very good'. Now I don't know what you understand by those words, but to me they are a very plain statement on the design of the cosmos. For you cannot interpret the word 'good' in a *moral* sense in that chapter, because many of the things that are described as good are inanimate, material objects. They were the result of God's creative acts, with no morality involved. So 'Good' cannot be used there in the moral sense of good as opposed to bad or evil. It must therefore be used in the sense of 'fitness for purpose'. When God pronounced that that which He had made was good, he could only have meant that it was suited perfectly and totally for the purpose He had in mind when He made it. It seems to me therefore that the refrain in Genesis 1 is the plainest possible statement that the cosmos was subject to design.

This brings us to our last point, namely, what was God's purpose? Accepting that the cosmos was designed, was fitted for a purpose, then what was that purpose? The purpose is very clearly revealed in Scripture. It is that all things should subserve the glory of God. We may go back to Psalm 19 and read there that 'the heavens are telling of the glory of God and the firmament is declaring the word of His hands. Day to day pours forth speech and night to night reveals knowledge.' The creation, the cosmos, reveals and declares the glory of God. We read similar words, less poetic perhaps, in the first chapter of Romans. We could show from one Scripture and another that the whole purpose of the cosmos is to demonstrate the glory of God and, in particular, certain aspects of that glory. It reveals His power, it reveals His godhead, it reveals His perfection. It reveals His tenderness and His care, His innate

beauty, His rationality. It reveals His faithfulness. I have no doubt that with a little extra thought, one could easily add to that list.

Here, then, is purpose of the cosmos. To subserve and to proclaim; to identify and to reveal the glory of God in its manifold aspects. The design of the cosmos resides in its fitness for that purpose. The Scripture, both in Old and New Testaments, can say that the cosmos is perfectly designed, perfectly fitted to reveal and to proclaim the glory of God.

But let us, finally, remind ourselves that even the design of the cosmos is Christ-centred. In Ephesians 1 v. 10 we read that the cosmos was something that he purposed *in Christ*, and in Colossians 1 v. 16, that all things were created *for Him*. Let us therefore return to the Christ-centredness and Christ-relatedness of the Biblical perspective on the cosmos. We should be satisfied with nothing less.

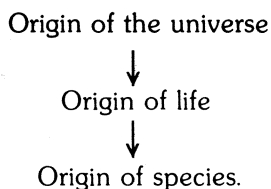
THE ORIGIN OF LIFE

J.H. John Peet

The journal "New Scientist" ran a competition in which entrants were invited to submit some examination questions on practical cosmology that might be answerable "in some future century". Amongst the amusing and ingenious entries was one by a Mr. Jones, who suggested: "In the container number 1 provided, you will find one void. From this you are to create a universe with an inhabitable planet. This planet should have earth, sky, water, night and day as an absolute minimum.....(Time allowed: 2 days)". He goes on to provide questions indicating the need to produce a variety of life from the dust.

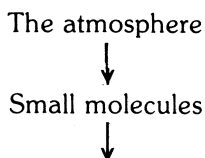
In general, two answers have been proposed to this question. The Christian says, "God did it." A lot of scientists reply, "It happened by chance." They say that the laws of physics and chemistry are sufficient to control such a process. Are they right? We will examine their claims.

Essentially there are three stages in evolutionary theory:



We are concerned with the second stage in this scenario. How did inorganic substances of the primitive earth produce the first living cell?

Prof. Ponnamperna, who has done a lot of work in this field of research, has said, "To the chemist, prebiotic synthesis appears as a two-part problem: (i) to make small molecules necessary for life; (ii) to combine the small molecules under similar conditions into the polymers, the polypeptides and oligonucleotides, which are the precursors of nucleic acids and proteins." These stages are summarised as:



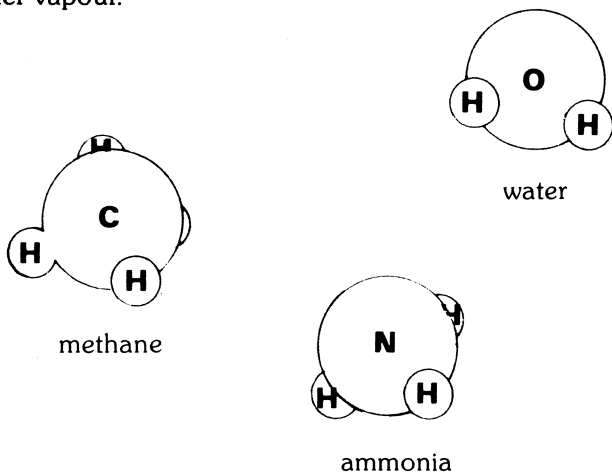
Large molecules



First cells

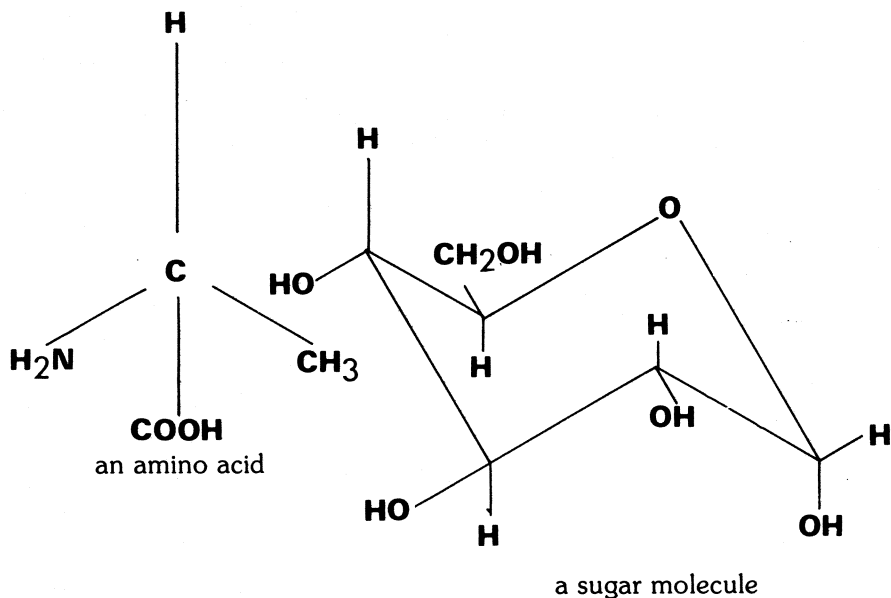
The Raw Materials.

We begin with a problem. We do not *know* the nature of the early atmosphere. The basic chemical units of life consist of substances such as sugars, amino acids, fatty acids, etc.. These compounds “burn up” in an atmosphere such as our present day one, which contains oxygen. This reaction will occur in any oxygen-rich (or “oxidising”) atmosphere. It is the reaction that proceeds in our body-cells to produce energy, so it needs to occur readily! Therefore, it is concluded, the primitive atmosphere in which the small molecules were produced must have been non-oxidising (or “reducing”). The most popular idea is that this atmosphere consisted of methane (the main component of North Sea Gas), nitrogen (the inert component of the present day atmosphere), and water vapour.



The trouble with this idea is that the evidence is against it! You see, the atmosphere leaves tell-tale signs in the rocks. When the geochemists study rocks corresponding to this supposed period of time, they find that they indicate that an oxidising atmosphere existed (Davidson, 1965; Hoyle & Wickramasinghe, 1977; Henderson-Sellers *et al*, 1980). To persist in talking about a reducing atmosphere is the result of either an ignorance of the facts (which is difficult to believe) or a desire to “bury one’s head in the sand.”

If we allow the evolutionist his hypothetical reduced atmosphere, where does that lead? On the basis of some experiments conducted in the laboratory (Calvin, 1951; Miller, 1953), it was found that some of the key building blocks to cellular molecules could be formed.

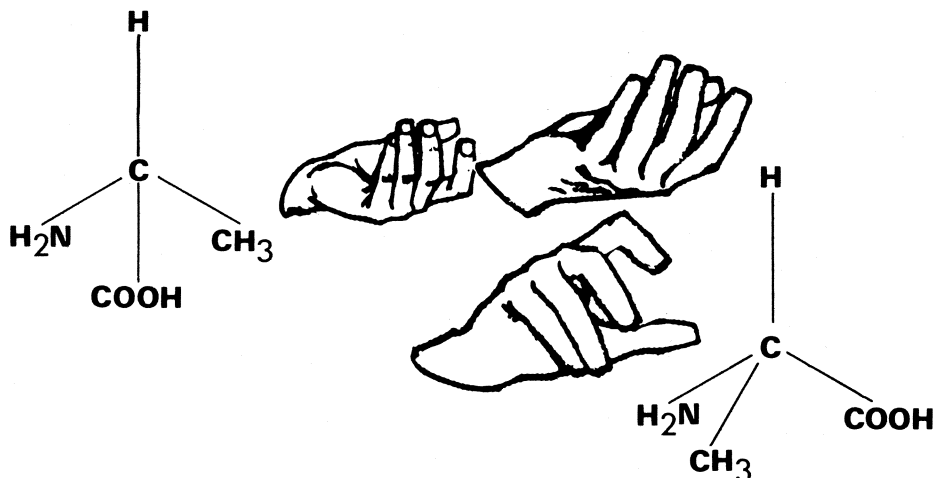


In fact, this was an excellent bit of experimental work; the only trouble is that it is irrelevant. Aside from the fact that it used this questionable atmosphere, it also relied on experimental conditions and techniques that cannot be found on the earth. The energy sources required to produce the compounds would also destroy them as fast as they could be produced (unless these special laboratory conditions applied)! (Abelson, 1966; Brinkman, 1969). Hull has shown that the quantities that might accumulate, according to chemical laws, is very small - for example, a concentration of 0.2 milligram in a swimming pool of water.

Left-handedness.

Not only was there too little of the products, but they were not the right ones. For example, twenty different amino acids are known in nature. Miller's experiment only produced four of these. How did the other sixteen arise? But,

there is a more subtle problem. Nineteen of the amino acids have two structural forms. This can be illustrated in terms of a pair of gloves. one fits a left hand; the other does not. In nature, all the amino acids are of the left-handed form.



This is crucial to life: all life's proteins (e.g. enzymes) are made of the L-type, and so the right-handed versions are useless. Chemical experiments (including Miller's) give both pairs. After much research, scientists have still failed to find a practical mechanism for a selective synthesis or destruction of one form (Elias, 1972).

Bigger and bigger.

Let us proceed on the basis that chance was able to achieve what intelligent scientists have failed to transpose, so that we can assess the probability of further steps. Our small building blocks are the raw materials from which complex chemical structures must be built. We will consider one family of compounds only (for brevity):

L-amino acids → Proteins.

Proteins are the structural materials of life (e.g. skin, hair, muscles) and also the active component of enzymes. Their structures are very precise- a slight deviation can cause a loss of biological activity. This specific structure is achieved by the precise ordering of the twenty amino acids on a chain of, perhaps, hundreds of such units. If we label these acids A, B, C, etc., then we are concerned with sequences such as

A-B-B-D-G-A-C-J-F-

From our primeval “soup” we have to select these acids in the right sequence and join them together. As any chemist will tell you, that is not easy to do even when you are controlling the experiment! (There is an added complication - we have to prevent our amino acids reacting with other building blocks, such as the sugars, with which they combine very readily). In fact, it can be shown by chemical thermodynamics, that the concentration of protein produced from this soup would be vanishingly small without a skilled chemist to selectively control its formation (Matthews and Moser, 1966).

The Code.

Professor Eigen has developed an ingenious system to overcome this problem of protein synthesis and produce specifically coded proteins. The sequence of units in the chain may look random to us, but biologically this “secret code” is crucial to replication and to the reproduction of living cells. This is best seen in DNA, which makes up our chromosomes. Eigen envisages a sequence of events which preferentially selects a chain of nucleotides (the building blocks of DNA) with a meaningful sequence. However, this is fundamentally in error, as shown by the concepts of Information Theory (Yockey, 1977). If I play “Scrabble” and find I have a random selection of letters A—N—D, the fact that that has meaning is the result of human convention, not chance. This is emphasised by the observation that a Frenchman, German, Dutchman, etc. will be far less excited with that group of letters than an Englishman will be! No, there must be a preconceived code if the chain is to be defined as meaningful.

The first cell.

Professor Fox has repeatedly claimed to have imitated the formation of a cell and its process of division and multiplication. But, his “cells” are very primitive compared to the biological systems. The association of molecules he describes is non-selective, unstable and is not self-organising. The process of cell division is due to the same physico-chemical effects as control the division of soap bubbles; there is no reproduction or replication.

The cell is a very complex machine; we have never seen even a simple machine arise spontaneously from inert matter. It has been shown that the chance a cell forming spontaneously out of its building blocks is one in $10^{100\,000\,000}$ (Morowitz, 1968), that is, one in a number that is so large that it is would require 5,000 of these leaflets to write it down! Not a chance?

Conclusion.

We conclude, therefore, that while, with the aid of intelligence, it may be

possible to pass our examination question, there is no way that life could have originated by chance. The laws of chemistry show it is impossible. So, how do I come to be here? And, what are the implications of my answer to that question?

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BIRDS: EVOLUTION OR CREATION?

John B. Ham

The argument about creation and evolution goes on-and-on-and-on. Many sources tell us that the inspiration that led Darwin to conclude that all living things progressed through their evolutionary development from protein molecules in primordial soup to man was the changes he saw in finches on the Galapagos Islands. "Darwin's finches", as they are called today, showed structural modifications when they radiated from one island to another. The finches on different islands do have definite differences that are probably due to gene mutations; he started with birds, however, and ended with birds. If you want to swallow the whole theory of evolution as it comes to us today you must start with a lizard before you get a bird to evolve.

A close look at birds shows us their very specialized adaptations for living the life that they do in our world. No other group of animals illustrates so perfectly the wisdom of a Creator who equipped the birds with the peculiar characteristics they need to survive. Note the changes that had to occur haphazardly to make a bird from a lizard and you will understand why the alleged years of evolutionary development must be numbered in the billions.

One of the first "facts" that the ornithologist reads in nearly every science book is that scales of lizards evolved into feathers. As I write this I have in my hand a primary flight feather from the right wing of an eagle; a former student of mine brought it to me from Alaska. The feather is 20.75 inches from base to tip and is 2.875 inches wide at its broadest point. Along most of the central shaft are projections called barbs; these make up the main part of the vane of the feather. The barbs have barbules on them, some pointing toward the tip of the feather, others toward the base. The barbules directed toward the tip are equipped with tiny hooks that cling to the minute flanges of those that point to the base. If the hooks are disengaged from the flanges the bird moves his bill along the shaft to preen his finery; you can do the same with your fingers. Each large feather of a crane has millions of these parts described. What a structure! What an incredible evolutionary development this is from the simple scale of an ancestral lizard!! The futile search goes on for the structure that is half scale, half feather; how longingly the evolutionist yearns to find such a structure!

Buoyancy, rapid digestion of food, and boundless supplies of oxygen are absolute necessities for a bird to live comfortably. The evolutionist tells us that the hollow bones of birds which are extremely light must have evolved from the solid bones of the lizard family. In several areas of the body the bones are

fused so that the number of bones in the wrist, ankle, backbone, and hand is greatly reduced. Sprouting from the breastbone is a special projection called the keel and to this structure the powerful flight muscles are attached. Not one reptile has the beginning of a keel.

The hyperactive life of a bird requires plenty of calories and oxygen to maintain a normal body temperature of 107 to 110 degrees Fahrenheit. The oxygen is delivered to all parts of the body by red corpuscles that are superefficient oxygen carriers — better than those of humans. While the heart of a lizard has just 3 chambers so that the blood pumped to the body is not pure, birds have a 4 chambered heart like ours so that the blood pumped from one of the lower chambers is absolutely pure when it is shipped to the body.

Breathing brings oxygen into the body. We have lungs in which oxygen is picked up by the blood; lizards have lungs of the same type. Birds have more than lungs; attached to the lungs are 9 air sacs that spread even to the hollow bones. This provides abundant areas for oxygen exchange. The movement of air through the lungs and air sacs is not completely understood by any scientist; most of the researchers agree, however, that no other animal known to man has such an efficient respiratory system.

Weight reducing adaptations of birds include much more than hollow and fused bones. The excretory system has no urinary bladder and kidney wastes are in the form of a paste-like substance that enters the large intestine to be eliminated. Nearly all female birds have only one ovary; the right ovary does not develop. The sex organs of both males and females enlarge only in the breeding season. During all the other months of the year the gonads are so tiny that they can hardly be found in some species.

Food consumed by birds is usually very high in calories so we might say that they know how to choose high octane fuel to keep their motors running. Turkeys and many of the larger birds gain one pound of weight after consuming 3 pounds of food; most mammals must ingest and digest 10 pounds of food to gain one pound. Since the flame of life burns so rapidly in birds they must feed from dawn to dusk and no human eats like a bird. Special digestive structures help the bird to digest food rapidly; one researcher reported that a cedar waxwing took only 20 minutes to completely digest food that was ingested.

It is extremely difficult for me to understand how all of these anatomical and physiological marvels could have developed by random chance in nature. The theory of evolution tells us that birds evolved from reptiles and often cites Archeopteryx as an example of such development. But Archeopteryx, the

fossil uncovered in Bavaria, is not such a missing link. One of the most highly regarded textbooks on ornithology begins the story of *Archeopteryx* by calling it a flying reptile, but concludes the tale by saying the fossil is indisputably a bird. The ancient animal had some reptilian features but the hollow bones, the short body, and the light build make it unmistakably a bird.

We cannot prove empirically (by experiment or observation) that Creation is a fact and neither can the proponents of evolution prove empirically that their theory is a fact. No man was there to observe these beginnings. "Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear" (Hebrews 11:3). Our study of the amazing world of birds helps us to believe in Creation and the Creator rather than to believe that random chance gave these creatures their marvelous attributes.

THE SIGNIFICANCE OF HOMOLOGY

Arthur Jones

There are many arguments put forward to support evolution, but these are variants of only two basic approaches:—

1. the evidence of hereditary variation; and
2. the phenomenon of homology (homologous structures).

The first approach marshalls the evidence for the variation that did or can occur in animal and plant populations. It is generally conceded that, on the basis of the evidence, scientists can demonstrate change and divergence on only a relatively trivial level — i.e., solely within the boundaries of the basic kinds of organisms. If we are to be convinced of endless evolution, then it must be through the second approach.

The second approach is based on the patterns of similarity revealed by studies in comparative biology. This includes the study of fossils (palaeontology). Evolutionists invariably refer to the fossil “record” and repeatedly assert that fossils provide “direct”, “objective” or “historical” evidence of evolution. These claims, however, are without foundation. Put simply, fossils do not bear labels. They do not proclaim their ancestry. What we make of them depends entirely on our study of their homologies — i.e., we proceed in the same way as we do with living organisms. Our evaluation of the concept of homology itself is thus of critical importance.

What is Homology?

It is standard practise for homologies to be defined as characters that resemble each other because they are derived from: an original character in a common ancestor. Thus, James Torrance, in a modern school text-book, states that “structures are *homologous* if they are structurally alike and have developed from a *common ancestor*.” (*Higher Biology*, London, Edward Arnold, 1979. *Emphasis his.*) Evolutionists argue that no other interpretation is acceptable to science. Their use of the homology argument is based on this evaluation.

If homologies are assumed only to have evolved, then it is obvious that all homologies will “prove” evolution. To say that structures with a common ancestry (homologies) have evolved (are evidence of evolution from a common ancestor) is a tautology. It is a truism or axiom, not a logical deduction from evidence. The purpose of a definition is to state precisely what something is — it must be in terms of *properties* that are observed rather than *pedigrees* that are merely assumed. A definition of homology in terms of evolutionary descent is not a definition at all!

The only satisfactory definition is that *homologous structures are those of different organisms, which correspond in relative position and connections with the same fundamental plan*. In terms of proper definition, homology is thus no embarrassment to creationists — a proper definition entails a recognition of distinct kinds of organisms.

Story-Explanations

As it is presented in the literature, the homology argument is an *historical interpretation* as distinct from a scientific argument. That is to say, it tells us that the facts of homology can be explained by a history — a *story explanation*.

What does this mean? The criterion of homology is said to be common origin. But what is the criterion — in practice, the only criterion — of common origin? It is, of course, homology. This is the only way the scientist can recognise common origin! This is not, you will notice, the same as historical evidence, which can only be eye-witness reports. This is entirely circular reasoning.

HOMOLOGOUS STRUCTURES

(similar structures
w/common origin)

proof

assumption

COMMON ANCESTRY

(evolution of organisms
w/homologous structures)

Is there any sense, then, in which the argument can be said to be scientific? A *scientific explanation* consists of *universals* (laws) and *particulars* (specific conditions). For example, if we studying the extension of a spring then we need to know *Hooke's Law* (a universal) and also *the load to be applied* and *the force-constant of the spring* (the particulars).

The *evolutionary story-explanation* purports to explain homologies in terms of history (evolutionary descent) and *particular events* (things that *happened* to occur and were perpetuated because they *happened* to make organisms better adapted in environments in which they *happened* to find themselves). There is an implicit denial of the existence of general principles of organisation or of constraints on possible plans. But this cannot be done! It is not possible to use a story as an explanation without a tacit appeal to laws, at least in the sense of law-like generalisations. If these generalisations are supported by, or consistent with, confirmed laws of science, then we must

grant that, while circular, the argument is not unscientific.

In the case of the homology argument — or, rather, story-explanation — it is just a fact, and a strange one, that the literature never states such “laws” explicitly and certainly never subjects them to analysis. In other words, evolutionists have never presented a scientific argument from homology or even sought to do so! They have relied on the presentation of a story-explanation, the proof of which rests on the prior assumption that homologies, by definition, point to a common ancestor!

Are there “Laws of Evolution?”

The fact that evolutionists have neither stated nor analysed these “laws” does not mean that there are no “laws”, whether real or imagined, implicit in the argument which they present. In fact, the evolutionist explanation of homology reveals that the process of evolution can be described in terms of at least three general patterns.

1. Evolution is a progressive process

For example, from a postulated land vertebrate ancestor with unspecialized limbs, evolution has supposedly produced organisms showing variations, both simple and complex, on the basic theme of the pentadactyl limb. This demands a demonstration that the genetic systems of organisms regularly give rise to variants that can then be selected (by natural selection). These variants would need to be more complex than already existing forms. *That demonstration has never been made.* It is simply assumed that such variants arose. They *fit the story-explanation*. For the story to be true, they *must* have arisen. Thus the *story* has become the substitute for the demonstration that has never been made.

2. Evolution is a conservative process

The patterns of homologies show that many organisms differ in details of structure but are built to the same basic plan. There are, for instance, millions of different insect species, but they are all fairly obviously insects!

This demands a demonstration that there is a genetic mechanism for the production of homologous organs that allows a faithful inheritance of fundamentals, but variations of details.

That demonstration has never been made. A genic explanation, for example, fails because it is now known that there need be no long-term persistence of any given relationships between a gene and a particular characteristic. Homologous organs may be controlled by non-homologous genes.

This fact raises a critical problem. Other — for example, embryological — criteria of homology also fail. In fact, evolutionists have no positive criterion by which they can distinguish *homology* (similarities due to common descent) from *analogy* (similarities not due to common descent). Within their theoretical framework homology is an entirely *subjective concept*.

3. *Evolution is an inefficient process.*

The homology argument assumes that there are two types of characteristics; *ancestral* characters and *adaptive*, or functional characters. It is assumed that the structural plan *common* to all the diverse members of a group *cannot* be adaptive. Maybe it was adaptive for a particular mode of life in the ancestral species, but now it is simply there by inheritance. It is only the specific modifications imposed on that plan during evolution which are adaptive *now*. Evolution is inefficient. Having begun with a given plan, it cannot change it even when it is no longer adaptive. This is a major assumption of the argument, yet it is open to very serious objections.

3.1 *Methodology.* It is logically impossible to demonstrate *non-adaptation*. There are no positive criteria available; all one can do is rule out every conceivable adaption — an impossible task. On the other hand, research can produce positive and cumulative evidence of adaption. The only valid approach, therefore, is always to assume adaptation until research forces a recognition of a possible non-adaptation. More specifically, *no comparison of structures is valid until their respective functions in the life of the organisms have been elucidated*. By this standard, evolutionary science has been bad science. Non-adaptation has simply been dogmatically assumed; little or no research has ever been done. Truly, this is an “evolution-of-the-gaps” science! Whenever proper research has been done, adaptation has been demonstrated. For example, the egg-laying mammals (monotremes) are ‘obviously’ primitive, incompletely developed mammals with poor thermoregulation. So ‘obvious’ was this assessment that little serious research was done until the 1960’s! Subsequent research has demonstrated that, for all the differences, monotremes are physiologically just as sophisticated as other mammals.

3.2 *Natural selection.* Many neo-Darwinists have also expressed disquiet about the ancestral/adaptive distinction. Why? Simply because of the fact that if we say that natural selection has produced all the remarkable and intricate adaptations that do exist, then it is nonsensical to claim at the same time that it cannot remove gross imperfections in body and organ plans.

3.3. *Convergent, serial and sexual homologies.* These are three classes of “homologies” which cannot be explained in terms of evolutionary descent. *Convergent homologies* are similarities in organisms unrelated by common descent. This is an extremely common phenomenon. For example, haemoglobins in ‘unrelated’ animals and plants, compound eyes of crustacea and insects,

cilia in diverse animals and plants, Old World and American porcupines, epibranchial organs in different fish groups, etc..

Evolutionists usually argue that convergence will never be so good as to mislead us. This assumption is quite gratuitous as two lines of evidence demonstrate: the lack of positive criteria for homology or analogy and the continuing arguments in the literature over many examples of supposed convergence. Whatever else may be said, on Darwinian assumptions, “convergences” clearly demonstrate the strongly adaptive nature of the “homologies” concerned.

Serial homologies are parts repeated along the axis of one and the same organism. For example, fore- and hind-limbs.

Sexual homologies consist in the detailed correspondances between the male and female genital systems.

In neither case — serial or sexual homologies — can these similarities be traced to a common structure in an ancestor. In each case, the evidence is there that the similarities exist because this is simply the most efficient basic pattern.

These considerations demonstrate that a scientific argument for evolution from *homology* does not exist.

A Creationist Response

After 15 years of study and reflection on the subject of homology, I would offer the following two conclusions for consideration.

(1) The concept of homology is based on a recognition of a principle of organization that remains the same in a variety of specific forms. Biologists, therefore, should be seeking laws (describing universal properties of living things) which describe the possible forms (morphologies) of organisms. It will then be clearly recognized that biochemical structures such as proteins and nucleic acids (with their template function), and biological structures, such as cell membranes (which also act as templates), do *NOT* create or determine form, but provide certain essential conditions for the selection or stabilization of the forms specified by the relevant laws of form. This may seem rather a radical rejection of the received wisdom, but there is, in fact, neither fact nor logic to support the claim that ‘genes are everything’ or that ‘DNA is god and RNA is his prophet’ (as one biologist has put it). In any case, it is quite clear that genic factors (which must now include the semi-independent factors in the self-replicating organelles) are only part of the total hereditary system of the cell. Cell membrane factors (presumably protein – based) are also an essential part of the system (the phenomenon of ‘cortical inheritance’).

(2) The existing forms (kinds) of living organism (generally the family unit in animal classifications and the genus unit in plants) represent various optimal solutions to the problems of life:—

(a) The biological features of organisms are optimally adaptive for the organisms in their normal environments. The basic patterns of homologous structures are adaptive in relation to general functional demands; the varying expressions of these patterns are adaptive to more specific functional demands.

(b) This correlation with normal habits and environments will always be totally consistent, providing positive justification for this approach.

(c) Correlation with a supposed evolutionary descent of types will only be consistent to the extent that it parallels the adaptive correlation. Elsewhere it will be inconsistent, confirming that evolutionists have no positive criterion which could be used to justify their interpretation.

Thus, I conclude that the biological features of both living and fossil organisms provide clues to the normal environment and habits of these organisms, *not* to evolutionary relationships.

Conclusion

The self-serving argument that Creationism is unacceptable because it is 'God-of-the-gaps science (i.e. no science at all) should be vigorously disputed. Historically and currently it is evolutionists who have been practicing such science. The foundational argument for evolution (from homologies) has been based on nothing more than our ignorance of the adaptive significance of many of the biological features of organisms. As research has continued, those gaps in our knowledge have been closing — and it is evolution, not the Creator, that has been squeezed out.

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CREATION & CONSERVATION The Ecological Orientation of the Christian Faith

Richard Russell Part II

CHRISTIANITY AND THE USE OF NATURE

It is now our task to ask whether the Judeo-Christian doctrine of Creation is seriously at odds with a responsible policy of conservation and whether those who have taken this doctrine seriously are guilty of the charges we have summarised above.

Most of the criticism of the Biblical view of creation seems to assume that there are two and only two basic views of nature — either ‘enchanted’ or ‘disenchanted’ or, in other words, that nature is ‘*sacred*’ or ‘*secular*’. Christianity is charged with holding the latter view while eastern religion in general is held to hold the more ecologically enlightened former view. While the charge may have some substance in that historically in medieval culture (due to the influence of the older nature religions) certain types of knowledge and control over nature were regarded as forbidden and impious (or even irrelevant to man’s best interests or pointless) and in the modern period, as we have admitted, many Christians ‘liberal’ and ‘orthodox’ have adopted a ‘secular’ view of nature, yet both are quite different from the biblical idea of creation. The biblical view rejects the idea that *man exists for (sacred) Nature*²⁵ or that *nature exists for (sacred) Man*. Both ‘Naturism’ and ‘Humanism’ look for ultimacy and absoluteness either in nature or man. The difference between them is to whether nature or man is divine and so which ought to have dominion over the other along the analogy of creator and creation. However, the biblical doctrine of creation radically rejects the deification of either man or nature (or both of them). Rather it is insistent that both man and nature do not have the reason for existence within themselves but that *they exist for the glory of God and for the purposes of God*. This radical theocentricity both *relativises* man and nature and *dignifies* them both as the creatures of God who stand in a covenantal relationship to Him. Arrogance and exploitation are therefore the outcome of a rejection of creatureliness and the shift from a theonomous to an autonomous outlook, from a theocentric to an anthropocentric worldview. Its principal modern source was the Enlightenment whose vision of man’s conquest of nature has been the dynamic of both capitalism and Marxism. Kant is typical of this secularised perspective which replaced the sovereignty of God with the sovereignty of man. He wrote:

“As the single being upon earth that possesses understanding he is certainly titular lord of nature and supposing we regard nature as a teleological system, he is born to be its ultimate end.”²⁶

It may be freely admitted that the notion that all creatures are designed to serve man as a frequent theme of patristic and medieval apologist and one may find it in Origen, Augustine and Aquinas, and even Calvin. However, the source of this notion — like many others that have plagued the Church — is not the Bible but later Greek philosophy. There was no place for this idea in traditional Greek religion as it would have clearly amounted to *hubris* and the fate of Prometheus stood as a warning. The Greek Enlightenment rejected the concept of *hubris* and thereafter all living things are taken to live purely and solely for the sake of man.²⁷ Aristotle in his *Politics* maintains that:

“... plants are created for the sake of animals, and animals for the sake of men; the tame for our use and provision; the wild, at least for the greater part, for our provision also, or for some other advantageous purpose, as furnishing us with clothes and the like.”²⁸

Similarly in Cicero's *Concerning the Nature of the Gods* Balbus as the spokesman for Stoicism argues against the Epicureans that the world was made for men:

“The produce of the earth was designed for only those who make use of it; and though some beasts may rob us of a small part, it does not follow that the earth produced it also for them . . . Beasts are so far from being partakers of this design, that we see that even they themselves were made for man . . . Why need I mention oxen? We perceive that . . . their necks were naturally made for the yoke, and their strong broad shoulders to draw the plough.”²⁹

Such an anthropocentric view is emphatically not that of the Bibles, as is clear from the following points:

1. God pronounced all the diverse kinds of creatures good prior to the creation of man.
2. Vegetation was given for good to all living things, men and beasts alike (Gen. 1:29-30).
3. Man seems to be a vegetarian before the Fall and again in the *eschaton*.
4. The way that God brings the different animals to Adam to be named (Gen. 2:19) shows that man is intended to share his Maker's care for the welfare of creation.
5. The destiny of man is closely tied up with that of his environment. The

ground is cursed because of man's disobedience (Gen. 3:17) but on the other side the creation is involved in the promises of the covenants that God makes with man. The covenant of the rainbow God makes with man 'and every living creature with you' (Gen. 9:12). Similarly the blood of the Passover sacrifice availed not only for the people of Israel but also for their animals. (Ex. 11:4-7). Finally, through Christ God will reconcile all things to Himself, whether things on earth or things in heaven . . . 'by making peace through his blood, shed on the cross' (Col. 1:20) so that . . . 'the creation itself will be liberated from its bondage to decay and brought into the glorious freedom of the children of God' (Rom. 8:21). In the re-newed earth the animals will be present and vegetation.

6. The weekly sabbath included rest for the working animals (Ex. 20:10) just as the sabbatical years provided a rest for the land and food for the wild animals (Lev. 25-7). Also 'A righteous man cares for the needs of his animal' (Prov. 12:10).

7. God waters ' . . . a land where no man lives, a desert with no-one in it, to satisfy a desolate wasteland and make it sprout with grass'. (Job 38:26-7). Concerning the wild donkey God says 'I gave him the wasteland as his home, the salt flats as his habitat'. (39:7). Pre-eminently Psalm 104 speaks of God's care for his whole creation. Nor are God's non-living creatures excluded for 'He determines the number of the stars and calls each day by name' (Psalm 147:4). Similarly in the NT the fall of a sparrow is noted as well as the number of hairs on a man's head.

In short, not only is the biblical teaching about nature not anthropocentric (nature exists solely for man) but neither was the early modern natural science that was influenced by biblical faith. This is seldom realised because secularised historiography of science has focussed almost exclusively in those developments which yielded power over nature. Indeed much late 19th and 20th century philosophy of science came to define science not in terms of *systematic knowledge* but in terms of *prediction and control* so that to know meant to predict and control. Hence the concern with universally valid laws rather than with individually structures and their inter-relationships. It is hardly surprising that such historiography regarded mathematical physics as paradigmatic science and showed strong tendencies towards the view that one day all the other 'inexact' sciences would be reduced to physics.

However, if one examines the writings of 'physicists' like Kepler and Copernicus one finds that any concern with prediction and control is rather marginal. Indeed they are clearly far more orientated to the development of — in a broad sense — natural theology than to technology.³⁰ For example Kepler concludes his *Cosmic Harmony* with these words:

"Thanks be to Thee, Oh Lord our Creator, who has granted me visions of beauty in Thy creation, and with the work of these Thy hands I give praise. Lo, I have completed the work to which I have been called; I have exploited the gifts Thou hast bestowed upon me; I have proclaimed the splendour of Thy work unto those who will read these proofs, in as much as I, in the limitations of my mind, have been able to grasp them."³¹

Similar motives were behind the Reformer William Turner in his revival of interest in ornithology after some two millenia of neglect. Indeed in the 17th century there were a considerable number of Christian philosophers and scientists who explicitly protested against the Stoic-Cartesian anthropocentric view of nature.

Cambridge Platonist Henry More maintained that 'Creatures are made to enjoy themselves, as well as to serve us.' God '... takes pleasure that all his creatures enjoy themselves, that have life and sense and are capable of enjoyment'. To think otherwise More tells us is provinciality and ignorance.³² John Ray the biologist traced the anthropocentric view, as we have done, back to Stoicism and maintains that this is a view which comes naturally to those — the reference, obviously, is to Descartes and his followers, — who believe that man alone, among all finite beings, is capable of sensation and perception, that '... all other animals are mere machines or puppets'. Ray who was fascinated by the diversity and intricacy of creation held there was only one sense in which everything in nature is made for men, namely that everything is worthy of his study. 'There is a greater depth of art, and skill, in the structure of the meanest insect, than thou (man) art able to fathom or comprehend.'³⁴ When the psalmist (Psalm 148) calls upon the insects to praise the Lord, he cannot mean this literally: what he must rather mean, Ray says, is that even the most 'vile and contemptible' of God's creatures can fruitfully be studied as illustrations of his glory. This tradition reached its climax in the enthusiasm for natural history in the nineteenth century which continued to have far more affinities with theology than with Baconian-Cartesian science. However, it is only now that the life sciences are beginning to recover from the highly reductionistic particulate analysis inspired by the latter and evolutionistic speculation³⁵ with its doctrine of the survival of the fittest which set man in a conflict relation with nature.³⁶

To sum up, the despotic attitude to nature which is now deplored does not find its roots in the Bible nor in a tradition derived from it but rather in the opposed 'rationalist' tradition of ancient paganism which was revived by modern humanism. However, this is not to find guiltless either the existentialistic or pietistic theologies which preach the transcendence of nature, who do not see nature as man's home now and forever, and who therefore have not protested the technological-industrial rape of nature.³⁷

Nor does this mean either that unlimited human childbirth finds biblical legitimacy. Fill the earth does not mean overpopulating it. The source of the error here is the chiefly Catholic idea of natural law derived from Aristotle's teleological thinking. The result here is that marriage and family are wrongly put in a means-end relation and sexuality is given no other end but reproduction.³⁸ There is also the question of the need to develop a lifestyle much lower in its use of resources but much richer in relation to God, fellow man, culture and nature. This means far more than jumping onto the conservation bandwagon for the central concepts need serious Christian reformation if they are to conform with the richly diversified concept of reality implied in the Christian doctrine of Creation. The ontology developed by the Christian philosopher, Herman Dooyeweerd, provides some indication of the diversity required.³⁹ However, if we consult a recent standard work such as *The Fontana Dictionary of Modern Thought* (1977) we confront not only an *anthropocentric* conception of conservation but one in which man's interests in nature are reduced to *economic* ones, and these in turn are reduced to ones which are capable of being *priced*.

In the item on 'Conservation' we find the following definition:

"In ecology the use of natural resources (hence often, explicitly, resources conservation) in a manner as to prevent their unnecessary waste or spoilation Conservation implied use (as distinct from preservation) but for the benefit of mankind on a long term rather than a short-term basis; in the words of Gifford Pinchot, first head of the U.S. Forestry Service, 'conservation means the greatest good for the greatest numbers and that for the longest time'. It may be achieved by positive steps through changes in technology (e.g. stubble-mulching to conserve soil from wind erosion) or ownership (e.g. creation of National Parks for conserving areas of outstanding natural beauty) or by negative steps such as legislation to arrest wasteful practices (e.g. limitations on the size of fish catches).

Here we notice that 'preservation' is conspicuously excluded from the concept of conservation it seems on the implicit criterion that it is irrelevant to the benefit of *mankind*. Those who are concerned about preservation tend either to justify it in terms of yet undiscovered benefits to mankind sometimes guaranteed *apriori* by postulating a 'total ecological system' (a modern version of the 'Great Chain of Being') in which the loss of anything could be humanly disastrous). Or they invoke a modernised version of the old nature religions and speak of the 'intrinsic value' of what they wish to preserve or focus upon the unworthy motives behind the powers of destruction. It should also be noted in the definition above that conservation *requires a criterion of unnecessary waste which implies a social philosophy*. Depending on the social philosophy this may mean with respect to cars e.g. decreasing fuel

consumption, reducing pollution, reducing speeds, eliminating built-in obsolescence, petrol rationing, taxation on size . . . or moving from private cars to public transport, or bicycles or It is this which has given rise to a central ambivalence concerning the discipline of ecology. This is clear from E.M. Nicholson's definition:

"Ecology is the study of plants and animals in relation to their environment and to one another. But it is more than that: it is the main intellectual discipline and tool which enables us to hope that human evolution can be mutated, can be shifted onto a new course. so that man will cease to knock hell out of the environment on which his own future depends."⁴⁰

On the one hand ecology is a natural science dealing with plants and animals and their environment. On the other it promises to provide the insight by which mankind can be 'transformed' so that they might live in harmony with their environment. The future of mankind depends on the 'mutation' that ecology alone has insight into, making ecology into a new gnostic religion. Ecology's mutation of human evolution will produce the new man who will fit into the ecological niche that nature has ready for him. Here we have messianic ecologism at work bringing peace to the earth.

If we turn now in the *Fontana Dictionary of Modern Thought* to the definition of 'natural resources' which occurred in the definition of 'conservation' we find the following:

"Natural resources: that part of the material components of the environment, including both mass and energy, physical and biological, that can be used by man. As such resources are bounded by the concept of utility, and resource estimates change with changing technological and socio-economic conditions. A distinction is conventionally drawn between non-renewable resources (stock resources) like coal deposits and renewable resources (sometimes called flow resources) like tidal power."

For something in nature to be useful or valuable for man it must possess 'utility' according to this definition. If we go on to check that definition we find that 'utility' (or 'value') is a matter of goods and services whose utility is 'reflected in the price the consumer is prepared to pay'. With such a concept of value there is no place for 'preservation' which was mentioned earlier. Nor is there any place for non-priced scarcity (e.g. air or clean water) which are essential to us, endangered, limited in supply, and yet never figure — because they are not quantifiable in monetary terms — in the calculation of profit and loss of those enterprises which are doing so much to destroy them.⁴¹ The Christian doctrine of Creation and Man are here and everywhere necessary conditions for the reformation of scholarship and worldview which alone can

bring a measure of healing to the much abused creation of which we are a part and in which we live.

Notes

25. A striking difference between the religion of the Hebrews and that of the nations surrounding them is the clear distinction they made between God and his creation. Jahweh rules nature but is not to be identified with it. Henri Frankfort wrote:

"The keeping of Jahweh's covenant meant . . . sacrificing the greatest good ancient Near East religion could bestow — the harmonious intergration of man's life with the life of nature . . . Man remained outside nature, exploiting it for a livelihood, offering its first fruits as a sacrifice to Jahweh, using its imagery for the expression of his moods, but never sharing its mysterious life."

Kingship and the Gods (Chicago, 1948) pp. 342, 344.

It is not surprising that it has been the 'process' theologians who have been the ones who have most easily entered into the ecology debate. For them reality (God, man and nature) is an organic interacting unity without any fundamental distinctions. One of their primary sources is A.N. Whitehead who so thoroughly rejected Cartesian dualism that he maintained that even supposedly 'inanimate' matter possessed a low level of awareness that he called 'prehensions'. For a recent example of the old Nature religion in contemporary dress see Charles Birch's essay 'Nature, Humanity and God in Ecological Perspective' in *Faith and Science in an Unjust World* (ed. R.L. Shinn, WCC, Geneva).

26. *Critique of Theological Judgement* (trans. J.C. Meredith, Oxford, 1928) p. 93-4.
 27. This shift reflects the manner in which the Greek culture religion of form replaced the older nature religion of matter. See H. Dooyeweerd *Roots of Western Culture* (1979).
 28. Aristotle's *Politics* bk 1, ch 8, 1256b.
 29. *De Natura Deorum* bk 5, 1, 199. (from H. Shapiro & E.N. Curley *Hellenistic Philosophy* p. 433).
 30. See Eugene M. Klaaren's excellent *Religious Origins of Modern Science: Belief in Creation in Seventeenth Century Thought* (Eerdmann, Grand Rapids, 1977).
 31. quote from Werner Hesisenberg *The Physicists Conception of Nature* (Scientific Book Club Guild, London, 1958) p. 8.
 32. *Antidote against Atheism* bk 2, ch 9, 3 (*Opera Omnia*, London, 1679, vol 12, pt 2, p. 82).
 33. *The Wisdom of God Manifested in the Works of the Creation* (3rd ed. London, 1701) pt. 1 p. 197.
 34. *Ibid.* pt. 1, p. 202.
 35. For a critique of the speculative character of Darwinism and the way in which this has retarded and damaged the biological sciences see Prof. W.R. Thompson's introduction to *The Origin of the Species* Everyman's Library, London, 1963). In the life sciences the individuality sciences (zoology and botany) have largely been neglected in favour of the modal sciences (biology, biochemistry, biophysics, — particularly the latter two). The general result is that living creatures in their environments have been largely ignored yet vast resources of research have been poured into unverifiable speculation concerning the origin of species on the one hand. On the other biochemistry has worked on the reductionistic premise that the animal world can in principle be entirely explained by that science. See ed. Ronald Munson *Man and Nature: Philosophical Issues in Biology* (Delta, NY, 1971).
 36. According to Herbert Spencer's evolutionism the struggle against nature is not only

necessary in order to survive, but the success in doing so demonstrates man's moral superiority over nature. Those who do not survive (or would not survive without help) do not deserve to survive and should not be helped to survive. This is the root of Spencer's viciously aggressive individualism. The struggle is not only *against nature* but *against fellow man*.

37. Cf. Egbert Schuurman *Technology and the Future* (Wedge Pub. Foundation, Toronto, 1980).
38. For the distinction in biblical thinking between marriage and family see James H. Olthuis / *Pledge You My Troth: A Christian View of Marriage, Family and Friendship* (Harper & Row, NY, 1975).
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39. Cf. *A New Critique of Theoretical Thought*.
40. *The Environmental Revolution* (London, 1970) p. 187.
41. On this whole subject see Bob Goudzwaard *Capitalism and Progress: A diagnosis of Western Society* (Wedge Pub. Foundation, Toronto & Eerdmans, Grand Rapids, 1979).

BOOK REVIEWS

The Rise of the Evolution Fraud

M. Bowden, 1982. Sovereign Publications,
England and Creation-Life Publishers, San Diego, California £3.90

Readers of *Ape-men: Fact or Fallacy?* by Malcolm Bowden will be interested to learn of a companion volume. In the new publication, attention is focussed on the men who were responsible for promoting the Darwinian theory of evolution by natural selection. As he traces the history of evolutionary thinking, Bowden provides an original and challenging account of the way Darwin, Lyell, Huxley and others went about their work.

After consulting the text of Darwin's original manuscripts and letters, Bowden has some radical comments to make about the development of his ideas. Towards the end of his life, when Darwin was writing for public consumption, he stated that he "worked on true Baconian principles, and without any theory collected facts on a wholesale scale . . ." Bowden's probing analysis makes it obvious that this claim is quite absurd. Chapter 16, entitled 'A critical review of "Origins",' is also an important section of the book: the reviewer has not before read such an incisive assessment of Darwin's *magnum opus*. Bowden's comments on Darwin's poor health show similar radical departures from tradition. During the centenary year of Darwin's death, one of his biographers claimed that Darwin suffered from psychosomatically induced illnesses brought about by "the bile of abuse and calumny relentlessly poured upon his peace-loving head."

Bowden also thinks that Darwin's poor health was linked with his writing about evolution. However, he suggests that "the root cause of Darwin's illness was the stress generated in him when he was writing about a theory *which he knew was basically false*." (p. 87) There are problems with all historical studies because there is often insufficient information to come to firm conclusions. Nevertheless, the reader is invited to examine Bowden's work, to assess whether there are reasonable grounds for his suggestion.

The image of Lyell is probably the one which is in most need of revision — if Bowden is right in his analysis. Lyell is generally recognized as a founding father of modern geology. His ideas on uniformitarianism have dominated the thinking of generations of geologists. Yet, Lyell is also described as an opponent of evolution — at least until Darwin's theory of evolution by natural selection had become widely accepted. Bowden paints quite a different picture: there is evidence to show that Lyell had a long-standing hostility to biblical revelation and that he actively encouraged the dissemination of views

which undermined the authority of the Bible.

Bowden traces the way Darwinistic thinking became the new orthodoxy. Perceptive comments are made on the 1860 British Association meeting, and on the 'overlooking' of Mendel's findings. Bowden documents some of the more recent problems creationists have found in presenting views which are at variance with the evolutionary scientific establishment.

The reviewer has found Bowden's book stimulating to read and considers it a welcome addition to the literature. There are some weaknesses which deserve brief comment here. First, Bowden makes Flood geology the accepted view of the first half of the Nineteenth Century. By this, he means that most of the sedimentary strata was attributed to the Genesis Flood by the geologists of that day. However, whilst most of these men believed the record of Genesis, they had largely abandoned the idea that a single global flood was sufficient to explain the earth's sedimentary rocks. Instead, they were exploring multiple-catastrophe models, with no general consensus.

Second, although Bowden seeks to see the creation/evolution issue in a philosophical framework, the attempt is unsatisfying. On the one hand, he accepts that evolutionists and creationists seem to have an equally valid interpretation of the data. "We have then an apparent balance between the evidence supporting creation and that for evolution." (p. 180) From this, he points out the way religious views influence the choice people make between opposing models. Yet, on the other hand, we read that evolution is a "vast scientific hoax" (p. 183). It seems to the reviewer that if the evolutionary interpretations are accepted as being reasonable, then much of the force of Bowden's studies on the "evolution fraud" is misdirected.

The most important contribution which Bowden has made is to identify sociological, psychological and religious influences which were active in Darwin and his contemporaries. As Henry Morris says in the Foreword: the book is an exploratory treatment of the subject and it shows the need for further research. Bowden is to be commended for writing in a clear and forthright manner. He brings a message with conviction, concern and a sense of urgency. He deserves a wide readership.

David J. Tyler.

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ISSN 0260-9460

Typeset and Printed by Campsie Marketing